chapter 6

Public Water Systems

Public Water Systems

Program Assistance

Air Regulations - For questions on air regulations, compliance inspections, or enforcement actions, contact your Region Office Air Program Manager (refer to Chapter 1).

Consumer and Utility Assistance - For consumer inquires or complaints regarding water and sewer utilities, management assistance and information for water and sewer utilities, and questions about water conservation, call the Water Utilities Consumer and Utility Assistance Section at 512/239-6100.

Funding for Reservoir Construction - For more information about funding for new local water projects, or expansions to existing ones, call the Texas Water Development Board (TWDB) Development Fund Section at 512/463-7867.

New System Plans or Design Amendments - For questions on requirements for submitting plans or to follow up on the status of a previously submitted plan, call Utility Certification and Rate Design at 512/239-6960.

Public Water Systems Compliance, Data Enforcement, and Operations - For public water system data, questions about compliance with drinking water standards and operational requirements, and questions about enforcement actions against non-compliant utilities, call the Water Utilities Monitoring and Enforcement Section at 512/239-6020.

Residential Water Operator Certification - For questions on certification or for information on training programs, contact Occupational Certification at 512/239-6133.

Water Rights Permits - For questions on surface water rights or for information on how to obtain a water rights permit, contact Agriculture & Watershed Management at 512/239-4433.

Wellhead Protection - For information on developing a wellhead protection program in your community, contact Public Utilities at 512/239-4753.

Federal and State Authority

Federal

EPA has delegated implementation and enforcement authority for public water systems to TNRCC under the federal Safe Drinking Water Act (SDWA). EPA may override the State's enforcement activities if the State does not act on violations in a timely and appropriate manner. State regulations must be at least as stringent as federal standards for the state to retain program authority.

State

TNRCC manages the federal program and is also authorized by the State to set requirements for design, operation, and maintenance of public water systems. These regulations have no direct federal equivalent and are not subject to EPA oversight.

Program Requirements

TNRCC approval of engineering plans and specifications is required before construction may proceed on either a new or existing public water system. TNRCC strongly encourages anyone planning a public water system activity

that may require approval to discuss it with TNRCC staff well in advance of submitting engineering plans. This will prevent unnecessary difficulties with processing the request and allow TNRCC staff to provide technical assistance as needed. Contact the Local Government Assistance Office (800/687-9222 or 512/239-5300) for help.

Public Water System Definitions

Public Water System - Serves water to at least 25 people per day or 15 connections at least 60 days per year.

Community Water System - Serves water to residential connections.

Non-Transient Non-Community Water System - Serves water to the same 25 persons for 6 months per year through non-residential connections.

Transient Non-Community Water System - Serves water to a varied population through non-residential connections.

Permits

A permit is not required to build or amend an existing public water system. However, engineering plans and specifications must be reviewed and approved by TNRCC prior to constructing a new public water system, or prior to making improvements to an existing system. These plans must be signed, sealed and dated (certified) by an engineer registered in the State of Texas who has demonstrated design expertise with potable water systems.

Review and Approval

The engineer prepares an engineering report, drawings, and specifications which detail the proposed project or improvements. The engineer certifies that the materials for review are his/her professional responsibility and submits them to the Water Utilities Division Plans Review and Rate Design Team for review and approval.

A review letter is usually sent to the design engineer (and copied to the client and appropriate TNRCC personnel) either granting or denying approval, or requesting additional information. Once approval has been granted, the design engineer is required to notify TNRCC when construction work begins and again when the work has been completed.

Review Processing Time

The rules allow 30 days for review but, in most cases, the normal turnaround is between one and three weeks. The time required depends upon the project's complexity and general compliance with 30 TAC Chapter 290 "Rules and Regulations For Public Water Systems."

The Water Utilities Division maintains a database which tracks a project from the day it is received through to final approval. To determine the status of a project, call the Plans Review and Rate Design Team at 512/239-6960.

Air Regulations

In addition to the water program requirements noted above, a public water system must also be evaluated for any impact on air quality. No action can legally result in a condition of nuisance smoke, odor, dust or aerosol, cause a traffic hazard, or contribute to a condition of air pollution. Nuisance and traffic conditions are referenced in 30 TAC Chapters 101.4 and 101.5.

There may also be specific air regulations that affect the construction and operation of public water facilities. For more information on air requirements, contact the Air Program Manager at your Region Office (refer to Chapter 1).

Reports

Most public water system reporting requirements are associated with operational or monitoring activities. If a water system has received a monitoring waiver (see the following section for details), it may be exempt from some of the reporting requirements listed below. For assistance with reporting requirements, contact Drinking Water Monitoring at 512/239-6020.

All Water Systems

All public water systems which utilize chlorine dioxide must enter into a Bilateral Compliance Agreement with TNRCC. This Agreement details the specific operating and reporting requirements.

Microbiological analysis results are reported on a monthly basis. The number of analyses conducted per month is based upon the population served by the system. Public water

systems are contacted immediately when a potential acute health hazard exists.

Nitrate/nitrite samples are also required on an annual basis.

Community and Non-Transient Non-Community Systems

The results of other chemical analyses are required from Community and Non-Transient Non-Community public water systems and are reported to TNRCC at various intervals in accordance with federal and state requirements.

Lead and copper sample reports are also required. The number of lead/copper samples required from each system is based on the population served, with the smallest systems required to collect at least five samples and the largest 100 samples. The specified number of samples is submitted during each of two initial monitoring rounds. If no detections of lead or copper occur then annual samples are collected thereafter for three years. If after three years no detections are found, the sampling frequency is reduced to once every three years.

Comprehensive Monthly Reports

Systems that treat surface water sources or groundwater sources that are under direct influence of surface water must complete comprehensive monthly reports related to adequacy of the treatment process. These systems (and systems that purchase treated water from them) must report the results of distribution testing.

Groundwater systems with more than 100 connections must file a report that provides data relating to the amount of treatment chemicals used, daily distribution system pumpage, dates of deadend main flushing, cleaning of storage tanks, results of microbiological and chemical tests performed, and other pertinent data.

Drinking Water Monitoring Waivers

Texas established a Vulnerability Assessment Program in 1991 to issue technically defensible waivers for public drinking water monitoring required by the 1986 Amendments to the SDWA. All municipal public water systems are evaluated; a waiver application is not needed.

Federal and State regulations allow TNRCC to issue monitoring waivers for asbestos, cyanide, and organic chemicals. Waivers for organic contaminants are for a three-year period, waivers for inorganic contaminants are for a nine-year period, after which another vulnerability assessment is required. Some base level monitoring may also be required during a waiver period.

Before waivers can be issued, Vulnerability Assessment Program staff must receive the following, where applicable:

- Documentation of water well construction, including depth of pressure cementation of the casing;
- A driller's log describing deposits or rocks encountered as the well was drilled; geophysical logs (e.g. electrical logs) are also valuable. Logs of nearby wells can be submitted if a well log is not available for the public water system well, or if the log is of poor quality. Water well drillers, property owners, underground water districts, engineering bid documents, TNRCC Central Records, and the TWDB are sources for well information;
- A map accurately locating the well(s) for which information is submitted; and
- A facility survey is required, documenting the following: 1) occurrence of asbestos/cement (A/C) pipe in the water system, 2) hydrogen sulfide (rotten egg smell) in the untreated well water, and 3) coal tar linings in storage tanks. The system must also submit the pH and temperature of the treated water in the area of the A/C pipe.

Municipalities which have not submitted the above information should do so as soon as possible in order to be included in waiver evaluations for the next biennial period. Systems with vulnerable water sources can reduce their vulnerability with detailed surveys of potential sources of contamination and with the implementation of a wellhead or watershed protection program. Additional information or survey forms can be obtained from the Vulnerability Assessment Program staff at 512/239-6020.

Fees

Public Water System Fee

The public water system fee has been billed to all public water systems annually since 1986 when the Texas Legislature authorized a "fee for

service." The fee helps cover costs associated with the drinking water monitoring program. Program activities include reviewing inspection surveys and proposed projects, coordinating chemical sample collection, providing technical assistance, reviewing chemical analysis results, conducting vulnerability assessments, and enforcement activities.

For questions on a bill or for assistance, call the Water Utilities Monitoring and Enforcement Section at 512/239-6020.

Inspections

A generic description of the inspection process is outlined in Chapter 3. For more detailed information on any aspect of the inspection process, contact the TNRCC Field Operations Division (512/239-0400) or your Region Office (refer to Chapter 1).

Sanitary surveys (inspections) are carried out by the TNRCC Region Offices and are designed to identify existing and potential problems in a public water system, as well as offer technical assistance when corrective action is required. The survey process protects the public health by providing consumers with a reliable supply of potable water.

The sanitary survey or inspection of a public water system is a complex process that is made up of four important steps: preplanning, review of the public water system's file, review of related documents and files, and conducting the field inspection. Most sanitary surveys are conducted on an annual basis and are routine in nature. Occasionally, due to consumer complaints, operational problems, or requests for assistance, surveys are conducted more frequently.

Each survey is completed using a standardized data form, which is included at the end of this chapter. The majority of the systems inspected utilize groundwater sources and are inspected for criteria listed on the first four pages. Systems dependent upon surface water and treatment plants are examined for compliance with the criteria on all six pages. The new Primary Drinking Water Standards are also listed at the end of the chapter as Tables 1 and 2.

Enforcement

A general description of the enforcement process is outlined in Chapter 3. If air quality violations are involved, the process is mandated by State law and differs slightly. The violation is either resolved within 30 days from receipt of a notice of violation (NOV), or the matter is referred to Central Office for formal enforcement proceedings. You are advised to contact your Region Office immediately for information on handling violations or to request technical assistance.

Enforcement actions against water systems violating federal or State water regulations may take several different forms, depending upon the severity and frequency of the violation(s).

Often, the violator is unaware of proper processes and is willing to make the changes necessary to come into compliance. In this case, the violator is referred to the Utility Assistance Program, and assigned a circuit rider. The circuit rider will provide technical assistance on-site to bring the system into compliance.

Alternatively, staff may recommend a Bilateral Compliance Agreement that defines actions necessary to bring a violator acting in good faith into compliance. In exchange for addressing compliance problems, formal enforcement actions will not be pursued.

Staff may also initiate formal actions against persistent or severe violators. Formal enforcement options include administrative actions and penalties by the Commission, and civil actions and fines through the Office of the Attorney General in District Court.

In addition, the Enforcement Team may use an expedited formal enforcement process for cases where violations are easily identifiable. In these cases, penalties and technical requirements are the same for each violator based on the number of violations.

In all cases, formal or informal, the violator is required to bring the system into compliance and to establish acceptable operating procedures and practices within specified timeframes.

In Addition

Other Assistance

For assistance with any of the programs listed below, contact the Consumer and Utility Assistance Section at 512/239-6105.

Circuit Riders

The Texas Rural Water Association provides "circuit riders" for one-on-one technical and business assistance in the field. Areas of expertise include operations and maintenance, water loss and leak detection, rate analysis, and financial and management planning. Circuit riders also handle complaints referred by the Utility Assistance Team.

Customer Service

Consumer Assistance Staff can answer questions on the applicability and interpretation of TNRCC's customer protection rules.

Financial Management Assistance

The Water Utilities Assistance Team offers a diverse set of skills to help water systems solve basic problems in complying with state and federal regulations. The primary targets for assistance are small utilities experiencing financial difficulties. The Utility Assistance Team provides in-depth management assistance to such utilities.

Publications

The Texas Utilities Update is a semi-annual newsletter produced by the Consumer and Utilities Assistance Section of the Water Utilities Division. This newsletter is distributed to all public systems in the state and contains the latest drinking water rules, monitoring information, updates on TNRCC news, and questions and answers from readers. Publications on TNRCC's jurisdiction over different types of utilities are also available.

Small Communities/Utilities

The Community Resource Group helps small communities, homeowner groups, and other small utilities with problems in providing water or wastewater service. The primary focus is financial management, but technical assistance is provided as well.

Water Rights

Raw water sources for public drinking water systems are either groundwater or surface waters. Groundwater is considered the private property of the overlying property owner pursuant to the Texas Water Code and Texas case law. Surface water bodies are the property of the State, but the right of use is a private property right. Surface water rights (rights of use), including rights for any reservoirs, are administered by the TNRCC. These rights are generally issued in perpetuity.

New surface water rights may be obtained from the TNRCC through submission of an application which usually must be accompanied by hydrologic and environmental data as well as a water conservation plan. The TNRCC's Regulatory Guidance Document (RG-141) for water rights describes in detail the permitting process for surface water rights. Generally, a permit will be granted if TNRCC finds that:

Water is available (after providing for protection of other, senior water rights holders and instream uses (including water quality and recreational uses); and

Evidence has been provided that the applicant will implement a water conservation plan (efficiently manage the water).

Public water systems wishing to construct a reservoir as a water supply source must obtain a water right from the TNRCC. The TWDB can provide planning and financial assistance through water supply planning technical assistance programs and through regional planning grants and loan programs for water supply projects. Assistance in developing water conservation programs can also be obtained from the Texas Water Development Board.

Significant Laws and Regulations

The following is a brief summary of the federal and State laws and regulations relating to public drinking water systems. Please refer to the official rules for specific questions regarding compliance and applicability. The TNRCC

publication “Regulatory Resource” (GI-32) contains detailed information on obtaining copies of the Agency’s Rules (refer to Appendix 4). The TNRCC Rules are also available on the Agency bulletin board. Refer to OnLine Services in Chapter 2 for more information.

Federal Law

Safe Drinking Water Act (SDWA) 1986

Mandates EPA to develop rules to promote safe drinking water.

Authorizes EPA to delegate the implementation and enforcement of these rules to the states and territories.

Requires EPA to add 25 new contaminants to the Phase II/V Contaminants Rule every three years.

Federal Regulations

40 CFR Part 141

Implements the requirements of the SDWA.

These rules currently include the Total Coliform Rule, the Surface Water Treatment Rule, the Lead/Copper Rule, and the Phase II/V Contaminants Rule. Proposed rules include the Information Collection Rule, the Disinfectant/Disinfection By-Products Rule, the Enhanced Surface Water Treatment Rule, and the Radionuclide Rule.

40 CFR Part 143

Establishes secondary standards to maintain aesthetic water quality. This includes standards for contaminants that affect the taste, color and smell of water, but do not pose public health risks.

State Law

Texas Health and Safety Code (THSC) Chapter 341

Authorizes TNRCC to adopt rules and establish standards and procedures which are necessary to achieve the purposes of the Code.

State Regulation

30 TAC Chapter 290

Includes the rules, standards, and procedures authorized by the THSC. Chapter 290 builds on the broad language in the THSC and provides specific and detailed rules. It also includes State chemical and microbiological monitoring and reporting criteria mandated under the SDWA.

Table 1. 32 Primary Standards Prior to 1986 SDWA Amendments

Microbiological	
Coliform Bacteria	
Turbidity	1 Turbidity Unit
Chemical	
Radiochemical	**Picocuries/Liter (pCi/l)**
Combined Radium-226 and Radium-228	
Gross Alpha Particle Activity	
Beta Particle and Photon Radioactivity	
Tritium	
Strontium-90 (bone marrow)	
Inorganic Compounds	**Maximum Contaminant Level (mg/l)**
Arsenic	0.05
Barium	1
Cadmium	0.01
Chromium	0.05
Lead	0.05
Mercury	0.002
Selenium	0.01
Silver	0.05
Fluoride	4
Nitrate as N	10
Organic Compounds	**MCL**
Endrin	
Lindane	
Methoxychlor	
Toxaphene	
2,4-D	
2,4,5-TP	
TTHM	
trichloroethylene	
carbon tetrachloride	
1,2-dichloroethane	
vinyl chloride	
benzene	
1,1-dichloroethylene	
1,1,1-trichloroethane	
1,4-dichlorobenzene	

Table 2. 83 New Primary Drinking Water Standards Required by 1986 SDWA Amendments

Microbiological

Turbidity
Total Coliform
Giardia lamblia
Heterotrophic Plate Count
Legionella

Chemical

Radiological Contaminants
Radium 226 and 228
Gross Alpha Particle Activity
Beta Particle and Photon Radioactivity
Natural Uranium
Radon

Inorganic Contaminant	Maximum Contaminant Levels (mg/l)
Antimony	0.006
Arsenic	0.05
Asbestos	7 million fibers/liter
Barium	2.0
Beryllium	0.004
Cadmium	0.005
Chromium	0.1
Cyanide	0.2 (as free Cyanide)
Fluoride	4.0
Mercury	0.002
Nickel	0.1
Nitrate	10.0 (as Nitrogen)
Nitrite	1.0 (as Nitrogen)
Nitrate & Nitrite (Total)	10.0 (as Nitrogen)
Selenium	0.05
Thallium	0.002

Organic Contaminant

Alachlor	0.002
Aldicarb	0.003
Aldicarb Sulfoxide	0.004
Aldicarb Sulfone	0.002
Atrazine	0.003
Benzo[a]pyrene	0.0002
Carbofuran	0.04
Chlordane	0.002
Dalapon	0.2

(continued on next page)

Table 2. 83 New Primary Drinking Water Standards Required by 1986 SDWA Amendments cont'd

Organic Contaminant	Maximum Contaminant Levels (mg/l)
Dibromochloropropane	0.0002
Di(2-ethylhexyl)adipate	0.4
Di(2-ethylhexyl)phthalate	0.006
Dinoseb	0.007
Diquat	0.02
Endothall	0.1
Endrin	0.002
Ethylene dibromide	0.00005
Glyphosate	0.7
Heptachlor	0.0004
Heptachlor epoxide	0.0002
Hexachlorobenzene	0.001
Hexachlorocyclopentadiene	0.05
Lindane	0.0002
Methoxychlor	0.04
Oxamyl (Vydate)	0.2
Pentachlorophenol	0.001
Picloram	0.5
Polychlorinated biphenyls (PCB)	0.0005
Simazine	0.004
Toxaphene	0.003
2,3,7,8-TCDD (Dioxin)	3 X 10-8
2,4,5-TP	0.05
2,4-D	0.07
1,1-Dichloroethylene	0.007
1,1,1-Trichloroethane	0.2
1,1,2-Trichloroethane	0.005
1,2-Dichloroethane	0.005
1,2-Dichloropropane	0.005
1,2,4-Trichlorobenzene	0.07
Benzene	0.005
Carbon tetrachloride	0.005
cis-1,2-Dichloroethylene	0.07
Dichloromethane	0.005
Ethylbenzene	0.7
Monochlorobenzene	0.1
o-Dichlorobenzene	0.6
para-Dichlorobenzene	0.075
Styrene	0.1
Tetrachloroethylene	0.005
Toluene	1.0
trans-1,2-Dichloroethylene	0.1
Trichloroethylene	0.005
Vinyl chloride	0.002
Xylenes (total)	10.0